

Module 1, Topic A, Vocabulary

Associative property of multiplication: You can change the grouping of terms being multiplied without changing the resulting value, or product. For example, $3 \cdot (x \cdot y) = (3 \cdot x) \cdot y$.

Base: In the term $3y^6$, the y is the repeating factor, or base, and may be a number or a variable.

Coefficient: A constant factor (not to be confused with a “constant”) in a variable term. For example, in the term $3y^6$, the 3 represents the coefficient, and is multiplied by y^6 .

Commutative property of multiplication: You can multiply terms in any order and not change the resulting value, or product. For example, $3 \cdot y = y \cdot 3$.

Exponent: In the term $3y^6$, the 6 is the exponent or power. The exponent tells you how many times to multiply the base (y) by itself.

Exponential expression: A mathematical term with a base, exponent, and sometimes a coefficient. For example, the term $3y^6$ is an exponential expression and it means $3 \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y$.

Exponential notation: The method used to write a repeated multiplication expression. $\frac{9}{7} \times \frac{9}{7} \times \frac{9}{7} \times \frac{9}{7}$ can be written as $\left(\frac{9}{7}\right)^4$. When your base is a fraction or a negative number, the base should be placed inside parentheses.

Negative exponents: When a base, x , is raised to a negative power, $-y$, it is equivalent to the fraction $\frac{1}{x^y}$. For example, $3^{-2} = \frac{1}{3^2}$.

Ratio: A comparison of the sizes of two values. Ratios are written as $A:B$ (e.g., 1:4), or “ A to B ” (e.g., 1 to 4) where the number A is first and the number B is second.

Value of the ratio: The value of the ratio $A:B$ is the quotient $\frac{A}{B}$ as long as B is not zero. For example, the ratio 6:10 has a value of $\frac{6}{10}$ or 0.6.

Zereth power: Any base raised to the power of zero has a value of 1. For example, $x^0 = 1$, $\left(\frac{4}{7}\right)^0 = 1$, $(-2)^0 = 1$.

Module 1, Topic B, Vocabulary

Order of magnitude: The exponent of the power of 10 when a decimal is expressed in scientific notation. For example, in scientific notation, the decimal 192.7 is represented as 1.927×10^2 , so its order of magnitude is 2 (the exponent in 10^2).

Power of ten: A term with the number 10 as its base. For example, 10^3 is a power of 10 that equals 1,000.

Product: The answer to a multiplication problem.

Product of a decimal: The result of multiplying any number and a decimal.

Scientific notation: The representation of a very large or very small number as the product of a decimal and a power of 10. The decimal must have a value greater than or equal to 1 and less than 10. For example, 2.41×10^5 is in scientific notation, while 24.1×10^4 is not because the decimal value, 24.1, is greater than 10. Scientific notation is used when the number is too big or too small to be conveniently written in standard form.